

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Previously Presented) A partial reinforcing method for reinforcing a part of a metal material, comprising:

a first press step for generating a plastic strain by a plastic flow of metal material on a front surface and a rear surface of the part to be reinforced, to form a front convex-concave surface and a rear convex-concave surface; and

a second press step for further generating the plastic strain by the plastic flow on the front convex-concave surface and the rear convex-concave surface, to form a front plane surface and a rear plane surface;

wherein said second press step simultaneously gives the metal material a static hydraulic pressure in a press direction and a shear force in a plane direction, upon forming of the front plane surface and the rear plane surface;

and further wherein in said second press step, a front punch and a rear punch are rotated in opposite directions to give the shear force.

2. Cancelled.

3. (Previously Presented) A partial reinforcing method according to claim 1, wherein the metal material is an aluminum alloy.

4. (Previously Presented) A partial reinforcing method according to claim 1, wherein the metal material has thickness of 2 to 10 mm.

5. (Previously Presented) A partial reinforcing method according to claim 1, wherein each of a front punch and rear punch used in the first press step has a press

surface on which plural annular convex-concave portions are formed about an axis thereof coaxially.

6. (Previously Presented) A partial reinforcing method according to claim 5, wherein a pitch of the adjacent annular concave or concave portions is 1 to 6 times of thickness of metal material.

7. (Previously Presented) A partial reinforcing method according to claim 5 or 6, wherein the cross section of annular convex portion and annular concave portion is comprised of an arch of which radius is 1 to 6 times of the thickness of metal material.

8. (Previously Presented) A partial reinforcing method according to claim 1, wherein each of a front punch and a rear punch used in the first step has press surface on which plural diverge convex-concave portions diverging from an axis thereof are formed.

9. (Previously Presented) A partial reinforcing method according to claim 8, wherein an angle defined by adjacent convex portions is 10 to 30 degrees.

10. (Previously Presented) A partial reinforcing method according to claim 8 or 9, wherein the angle defined by the convex portion on the front surface and the convex portion on the rear surface is smaller than 30 degrees.

11. (Previously Presented) A partial reinforcing method for reinforcing a part of a metal material, comprising:

a first press step for generating a plastic strain by a plastic flow of metal material on a front surface or a rear surface of the part to be reinforced, to form a front convex-concave surface or a rear convex-concave surface; and

a second press step for further generating the plastic strain by the plastic flow on the front convex-concave surface or the rear convex-concave surface, to form a front plane surface or a rear plane surface;

wherein said second press step simultaneously gives the metal material a static hydraulic pressure in a press direction and a shear force in a plane direction, upon forming of the front plane surface and the rear plane surface;

and further wherein in said second press step, a front punch and a rear punch are rotated in opposite directions to give the shear force.

12. (Currently Amended) A partial reinforcing apparatus for reinforcing a part of a metal material, comprising:

a front punch having a planar press surface and a rear punch having a planar press surface nipping and pressing the metal material, said front punch and rear punch having annular convex portions and annular concave portions to generate strain in the metal material and form front and rear convex surfaces; and

a rotating means for rotating the front punch and the rear punch in opposite directions about an axis thereof, respectively, to thereby give the metal material a static hydraulic pressure and a shear force.